Title (en)
NETWORK NODE CLUSTERING

Title (de)
NETZWERKKNOTEN-CLUSTERING

Title (fr)
REGROUPEMENT DE NOEUDS DE RÉSEAU

Publication
EP 4002225 A1 20220525 (EN)

Application
EP 21196830 A 20210915

Priority
US 202016953179 A 20201119

Abstract (en)
A method may include assigning each node of a first network to a different node cluster such that a number of nodes equals a number of node clusters, selecting multiple nodes of the first network as a set of nodes, and selecting multiple node clusters as a set of node clusters. The method may also include solving a first optimization problem by reassigning one or more of the nodes of the set of nodes to different node clusters of the set of node clusters while maintaining assigned node clusters of the nodes that are not part of the set of nodes and after reassigning one or more of the nodes of the set of nodes to different node clusters, merging the nodes assigned to at least one of the node clusters to form a second network with fewer nodes than the number of nodes of the first network.

IPC 8 full level
G06N 5/00 (2006.01); **G06N 20/00** (2019.01); **G06Q 10/04** (2012.01); **G06Q 50/00** (2012.01); H04L 41/0823 (2022.01); H04L 41/0893 (2022.01)

CPC (source: CN EP US)
G06F 18/23 (2023.01 - CN); **G06N 5/01** (2023.01 - EP); **G06N 20/00** (2018.12 - EP); **G06Q 10/04** (2013.01 - EP); **G06Q 10/063** (2013.01 - EP); **G06Q 50/01** (2013.01 - CN EP); **H04L 41/0813** (2013.01 - US); **H04L 41/0823** (2013.01 - CN EP US); **H04L 41/0893** (2013.01 - EP); **H04L 67/10** (2013.01 - CN); **H04L 67/1042** (2013.01 - CN)

Citation (search report)
- [XI] V. A. TRAAG ET AL.: "From Louvain to Leiden: guaranteeing well-connected communities", ARXIV.ORG, CORNELL UNIVERSITY LIBRARY, 201 OLIN LIBRARY CORNELL UNIVERSITY ITHACA, NY 14853, 30 October 2019 (2019-10-30), XP081554436, DOI: 10.1038/S41598-019-41695-Z
- [L] V. A. TRAAG: "Faster unfolding of communities: Speeding up the Louvain algorithm", PHYSICAL REVIEW E, vol. 92, no. 3, 3 September 2015 (2015-09-03), pages 032801, XP055906798, ISSN: 1539-3755, DOI: 10.1103/PhysRevE.92.032801
- [A] EHSAN ZAHEDINEJAD ET AL: "Multi-Community Detection in Signed Graphs Using Quantum Hardware", ARXIV.ORG, CORNELL UNIVERSITY LIBRARY, 201 OLIN LIBRARY CORNELL UNIVERSITY ITHACA, NY 14853, 12 January 2019 (2019-01-12), XP081002759

Designated contracting state (EPC)
AL AT BE BG CH CY CZ DE DK EE ES FI FR GB GR HR HU IE IS IT LI LT LU LV MC MK MT NL NO PL PT RO RS SE SI SK SM TR

Designated extension state (EPC)
BA ME

DOCDB simple family (publication)
US 11159371 B1 20211026; CN 114553864 A 20220527; EP 4002225 A1 20220525; JP 2022081410 A 20220531

DOCDB simple family (application)
US 202016953179 A 20201119; CN 202111198636 A 20211014; EP 21196830 A 20210915; JP 2021170477 A 20211018